

## Article

# Bilingual Guided Tour and Research of Zhou-Deng Memorial Hall

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**Abstract:** In the era of globalization and China's "Culture Going Global" strategy, promoting red culture on the international stage has become a crucial means for us college students to enhance national cultural confidence and tell Chinese stories well. As a red landmark commemorating the deeds and spirits of predecessors, the Zhou-Deng Memorial Hall shoulders the mission of spreading China's revolutionary spirit. However, when carrying out international communication, the memorial hall faces practical challenges: incomplete bilingual materials and biased cross-cultural interpretation, which seriously affect the communication effect of red culture. Therefore, optimizing bilingual guided tour services is an urgent task we students hope to address. In this study, combining the current situation of the memorial hall, we propose three-dimensional solutions: At the content level, construct a standardized bilingual lexicon. In service models, create an "online + offline" integrated system. At the resource integration level, expand international cooperation actively, use overseas social media to broaden communication, seek support from cultural and tourism projects, and introduce cutting-edge digital technologies. This study provides practical ideas for the memorial hall and other domestic red venues to improve bilingual tour services. As college students, we hope our research not only enhances the international communication effectiveness of red culture but also contributes to constructing the international discourse system of Chinese red culture. During the research, we deeply felt the significance of red culture communication and expect these suggestions to inspire the international development of red culture venues.

**Keywords:** bilingual guided tour; Zhou-Deng Memorial Hall; red culture communication; service optimization

## 1. Introduction

### 1.1. Research Background

"Enhancing the expressiveness, communication power, and influence to vividly spread red culture", which guides its international communication. The Zhou-Deng Memorial Hall, a significant site commemorating prominent historical figures, houses 15,741 cultural relics and documents, including 61 first-class precious relics, making it a key site for red culture dissemination. The basic exhibition vividly recreates the glorious lives of the two great figures, and temporary exhibitions like Boundless Love — predecessors and children have enriched the display content. In recent years, with the steady growth of international tourists — data from the Ministry of Culture and Tourism shows that the annual growth rate of international visitors to domestic red culture venues reaches 15% — the memorial hall has also received more and more international guests. However, our research found that the memorial hall faces some challenges in international communication: On the one hand, under the influence of multiculturalism, there is a tendency for red culture to be overshadowed in the digital age, sometimes becoming confined by rigid content and limited forms. On the other hand, the existing bilingual guiding services reveal certain areas for improvement. In terms of content, bilingual materials are not as abundant

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as desired, and the cultural interpretation could benefit from further systematization and depth, to better meet the needs of international visitors seeking a more thorough understanding of historical backgrounds. Additionally, while there is interest in cross-cultural comparisons, there are gaps in meeting domestic visitors' expectations in this regard. At the service level, there is a need for more foreign language guides, modernized service formats, and enhanced interactivity to provide a more engaging visiting experience. In terms of resources, the venue faces challenges in leveraging advanced technologies and international collaborations due to limited international cooperation and technical support. As global digital transformation of museums progresses, successful examples such as the British Museum's multilingual narratives and the Louvre's international cooperation projects offer useful references for the memorial hall in optimizing its bilingual guiding services. However, considering the unique historical background and spiritual significance of red culture, adapting bilingual expressions to meet the needs of international visitors remains a crucial task for our student research team to address in practice.

## *1.2. Research Significance*

### *1.2.1. Theoretical Significance*

When translating "Study for the Rise of China", we found that the literal translation "Study for China's Rise" could lead to misunderstandings among international visitors, making it important to clarify the context behind the phrase. Later, referring to Nida's theory of functional equivalence, we supplemented the explanation with predecessor's childhood educational background: "When predecessor said this at the age of 12, his aim was to save the nation from colonialism", which helped foreign visitors understand its spiritual connotation. This practice revealed the theoretical gap between "semantic faithfulness" and "cultural empathy" in the translation of red culture, and became the original intention for us to construct the three-dimensional optimization framework [1].

### *1.2.2. Expanding Museum Service Theory*

By introducing cross-cultural communication theory and service design theory into the research on bilingual guided tours in red venues, this study re-examines and clarifies the unique functional positioning of bilingual guided tours in red venues in terms of historical narrative accuracy, cultivating emotional resonance, and value transmission [2]. Starting from meeting the diverse needs of international tourists and domestic audiences, the exploration of innovative models for bilingual guided tour services from the perspective of interdisciplinary integration opens up a new research perspective for museology in both service theory and practice, adding fresh insights to the theoretical framework of museum services.

### *1.2.3. Practical Significance*

In the bilingual intelligent guided tour system of the Zhou-Deng Memorial Hall, bilingual recognition technology is totally a real game-changer for enhancing the interactive experience and boosting global cultural exchange. As student researchers, we were struck by how this tech isn't just a gimmick — it's a practical solution that bridges language gaps and makes red culture accessible to global visitors. The system combines state-of-the-art speech recognition engines with natural language processing. During our research, we were genuinely impressed by its smooth performance: it can instantly convert voice commands into text and tackle complex queries, like explaining "predecessor's contributions to the Anti-Japanese War". As someone who's often struggled with translation app errors, we can say this reliability is a huge upgrade — it not only reduces misunderstandings but also ensures information is delivered clearly and efficiently. More impressively, the tech blends seamlessly with the memorial hall's cultural heritage [3]. It balances high-tech efficiency with human touch — when we tested the system, we felt like it doesn't just deliver facts but also makes historical stories pop. This combination offers visitors — especially

international ones — a more super immersive cultural experience, which we think proves tech can be a powerful tool for preserving history. When tech meets cultural heritage, it isn't just about innovation — it's about making history relatable to everyone, everywhere.

## **2. Overview of the Zhou-Deng Memorial Hall**

### *2.1. Cultural Value of the Zhou-Deng Memorial Hall*

As a significant venue commemorating the great revolutionaries' predecessors, the Zhou-Deng Memorial Hall harbors profound historical and cultural heritage. He, one of the key historical figures in modern China, left an indelible mark on history through his lifelong political practice and remarkable contributions, emerging as a vivid symbol of the Chinese national spirit. Meanwhile, as a pioneer in advocating for women's rights in China, predecessor's deeds and spirit have illuminated the path for generations like a lighthouse. I noticed that the memorial hall not only systematically displays the life trajectories of these two great figures but also unfolds a magnificent panorama of modern and contemporary Chinese history through the three-dimensional presentation of thousands of historical relics and first-hand historical materials. Wandering through the exhibition halls, you'll truly feel that those yellowed manuscripts and time-worn clothes are no longer cold exhibits — they narrate, in their unique way, a nation's struggle and awakening amid the torrents of time [4].

### *2.2. Advantages and Necessity of Bilingual Guided Tour*

As a student who has visited the Zhou-Deng Memorial Hall, I realized bilingual tours aren't just a cool idea — they're a total necessity. Data from the Ministry of Culture shows that the annual growth rate of international visitors to red culture venues reaches 15%, and the number of foreign visitors received by the memorial hall has doubled in three years (from 12,000 in 2022 to 25,000 in 2024). I remember when visiting the hall, I heard a foreigner pointing to predecessor's letter and asking his companion, "How did she balance her revolutionary mission with her identity as a woman?" This shows that international visitors are no longer satisfied with "just looking at exhibits", but are eager to understand the human brilliance of red culture figures, which is exactly the demand gap that bilingual guided tours need to fill. What's awesome is how bilingual guides don't just translate words — they help visitors understand why predecessors matter [5].

Tech-wise, the system is a student's dream project. We tested voice recognition tools for months before finding one that gives real-time translations and adds context — like when it translates "Strive for China's rise", it'll drop a 30-second story about his childhood. That beats static signs any day! Plus, the AR features make the hall feel like something out of a sci-fi movie, which is a huge plus for attracting Gen Z.

In the long run, this isn't just about tours — it's about how we share red culture globally. After interning here, I see that high-quality bilingual services do more than attract visitors; they show how China's cultural confidence isn't just a slogan — it's in the tech we build and the stories we tell. For us, that's what makes this project a total game-changer for student researchers like us.

## **3. Demand Analysis of Bilingual Intelligent Guided Tour**

### *3.1. User Demand Analysis*

When studying the bilingual guiding system project, I quickly realized user needs analysis isn't just a formality — it's the backbone. The user pool is wildly diverse: tourists taking selfies, grad students with notebooks, art teachers sketching exhibits. Their needs? Totally night and day once you start interviewing [6].

For language, surveys showed 62.3% of internationals want mother-tongue guides. But here's the kicker: when I translated his "Strive for Rejuvenation", a French visitor stopped us: "Wait, why did he say that as a kid?" That's when I got it — translations need

backstories. So we built a context module, like adding his childhood timeline when key quotes pop up.

### 3.2. Functional Demand Analysis

As a researcher on this system, when doing functional demand analysis, I think we should start from user groups and venue features to build a practical and educational guiding system.

#### 3.2.1. For User Adaptation

Maybe we can strengthen bilingual info for international visitors, set up an academic resource library for researchers, develop teaching modules for educators, and optimize the interface based on UX research. For example, if our survey finds that scholars have trouble finding certain documents, adding a categorized search bar could prove the practical value of user segmentation [7].

#### 3.2.2. In Content Design

We could integrate text, pics, audio and video to enrich interactions, and try using AR to recreate historical scenes. When we see user feedback like "feels like being in the 1920s", that shows AR really boosts cultural storytelling.

#### 3.2.3. On Technical Implementation

Suggest using bilingual speech recognition for accuracy, designing a simple interface, and doing smart recommendations through ethical user behavior analysis (need to protect privacy!). These tech choices should balance functionality with research ethics.

## 4. Technical Implementation

### 4.1. Bilingual Recognition Technology

When researching this, we kept wondering how to use tech to build a bridge for cultural communication, good technology should be like a thoughtful guide, not just understanding words but knowing how to explain things thoroughly. While checking materials, we found authoritative reports saying the recognition rate exceeds 95% in ideal environments, but we cared more about real-world adaptability. We specifically asked our foreign language major friends to simulate different accents for testing, and even went to the memorial hall to observe how visitors asked questions — we noticed some senior tour groups liked using dialects to ask about "Premier his stories". While international visitors often pressed for timelines of specific historical events [8]. These observations later led us to suggest two things to the tech team: build a lexicon including dialectal vocabulary, and create timeline indexes for historical events. The idea that made us feel on the right track was treating technology as a key rather than just a tool. When we saw a system that, upon recognizing "contributions to the Anti-Japanese War", could simultaneously pull up predecessor's related manuscript images and audio explanations in the memorial hall, we suddenly realized good bilingual recognition shouldn't just be a translator — it should be a cultural decoder. Looking back now, those days of hunting for technical solutions everywhere were actually about finding a magic that makes history "understandable".

### 4.2. Bilingual Content Design

When researching what kind of system meets modern needs, content design was a headache — how to make words build a cultural bridge, not just do mechanical translation? At first, we pored over the memorial hall's international materials and visitor surveys: seniors wanted down-to-earth stories, while foreigners kept asking for historical context. Going through some predecessors' translations, I realized translation isn't about word-

for-word conversion — it's about matching the historical backdrop, because conveying meaning is what language is really for.

We'd toss texts into different translation engines first, then have our team members check every sentence. Once we argued for two hours over that — should it be "Study for China's revival" or "Learn to build a stronger nation?" We finally settled it by finding the letter.

While in the hall watching documentaries, we noticed that when showing his Nankai years, playing related photos and videos made visitors more engaged. That's when we knew the guide system shouldn't be all dry text — audio-visual integration is key to grabbing attention [9].

The real breakthrough came when we saw a visitor taking notes on the bilingual display. That's when we got it: good content isn't about perfect grammar — it's about making people go "Ah, got it!" We need to turn guide language into a time machine, not just a dictionary.

## 5. Conclusions and Prospects

### 5.1. Key Findings

#### 5.1.1. Content Precision: The Cornerstone of Cultural Communication

**Theoretical Framework:** Based on Nida's functional equivalence theory, we adopt a "machine translation + human proofreading" model to ensure semantic fidelity. For example, when translating "the Five Principles of Peaceful Coexistence", we cross-checked 1953 diplomatic archives to resolve disputes over different translations and avoid historical misinterpretation.

**Context Integration:** Embedding predecessor's diplomatic achievements (such as the Bandung Conference) into international political timelines not only enhances content relevance but also improves visitor experience.

#### 5.1.2. Resource Ecosystem: Building a Global Communication Network

**Omni-Channel Integration:** For instance, adding QR codes to physical exhibits allows visitors to "collect" digital artifacts (like 3D models of his manuscripts). Collaborating with other red memorial halls to form diversified online platforms, which triggers young people's collecting habits — just like blind box shopping.

### 5.2. Future Prospects

The bilingual smart guide system at Zhou-Deng Memorial Hall is expected to evolve in the following key directions, driven by technological advancements and cultural integration:

#### 5.2.1. Tech Interaction

The future development direction is to introduce deep learning AI for optimizing the bilingual recognition model — aiming to resolve accent and context challenges. Additionally, analyzing user clicking behaviors is expected to optimize the interface, making core functions more user-friendly and accelerating access efficiency by 30%.

#### 5.2.2. Immersive Experience

The prospective development lies in integrating VR, AR, and MR technologies. We have a really cool suggestion. Let's turn the Xi'an Incident scene into a VR "script-killing" experience. Tourists can play as predecessor's adjutant, and in the virtual meeting room, they help predecessor choose negotiation strategies. For example, when a tourist "chooses" a peaceful settlement, the system will pop up an animation of historical materials from the Japanese Anti-War Alliance in 1937. The most amazing part is the MR photo-taking function. If you take a photo with the virtual model of predecessors and post it on

Moments with the caption "Having a meeting with predecessors in the same frame", we can't believe how many young people will rush to check it out and make it a must-visit place.

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